

# ABSTRACT

An apparatus and method for generating finite impulse response (FIR) filter coefficients are presented. The apparatus includes an address generator that multiplies a desired cutoff frequency  $f$  by an integer  $n$  to generate an address, a first look-up table that generates a sine function value of the address, a divider that divides the sine function value by  $n\pi$ , a multiplexer that generates an impulse response function value by selecting one of a value produced from the divider and  $2f$  based on an outside control signal, and a multiplier that multiplies the impulse response function value by a corresponding window function value to generate an  $n$ th filter coefficient for the FIR filter.